



Alternate Position, Navigation & Timing

Captain Ron Thomas

Managing Director Flight Technical Operations

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Maximize Benefits / Minimize Costs

- Most airline have very small profit margins
- ADS-B Out and In equipage is very expensive
- Limited cost/environmental savings proven to date
- Can't afford new equipment for ADS-B and APNT

Maximize Benefits / Minimize Costs

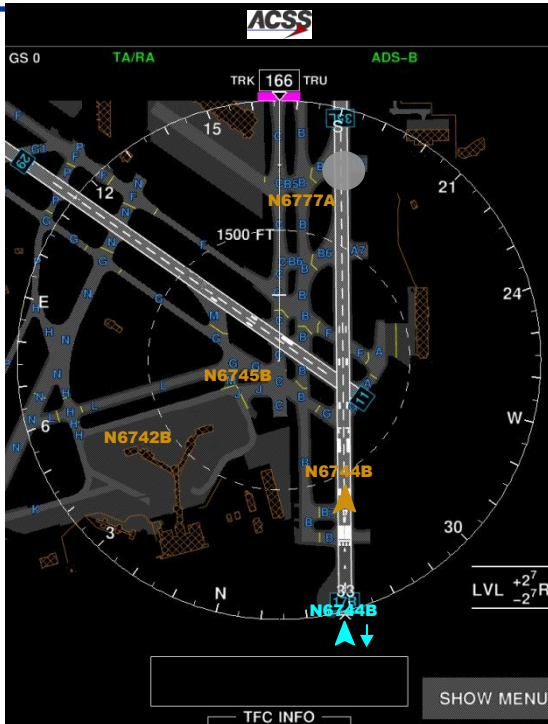
- APNT current strategy of using existing capabilities is good
 - Enhanced DME/DME infrastructure
 - VOR MON only where necessary
 - SSR and ILS
- All US Airways aircraft have DME/DME/IRU equipment installed

US Airways NextGen Support

- ADS-B In
 - Demonstrated SAMM (Surface Area Movement Management) with SURF-IA in PHL Nov-Dec 2009



SafeRoute – SAMM

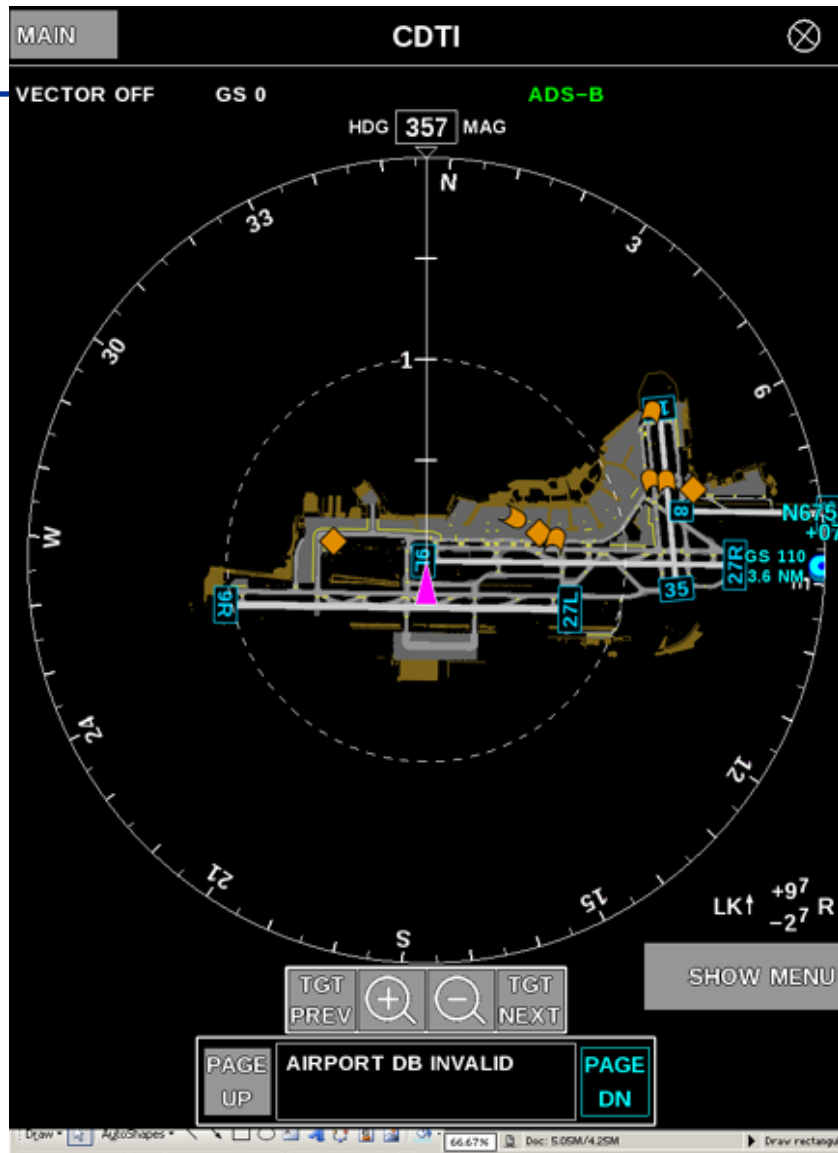


- SAMM: (Surface Area Movement Management)
- Provides moving map display of the airport surface and position of participating nearby traffic (aircrafts and ground vehicles), relative to own ship.
- Provides display of Intruder information, i.e. Flight ID, Ground Speed & Intent.
- Displays on Class II Electronic Flight Bag (EFB)

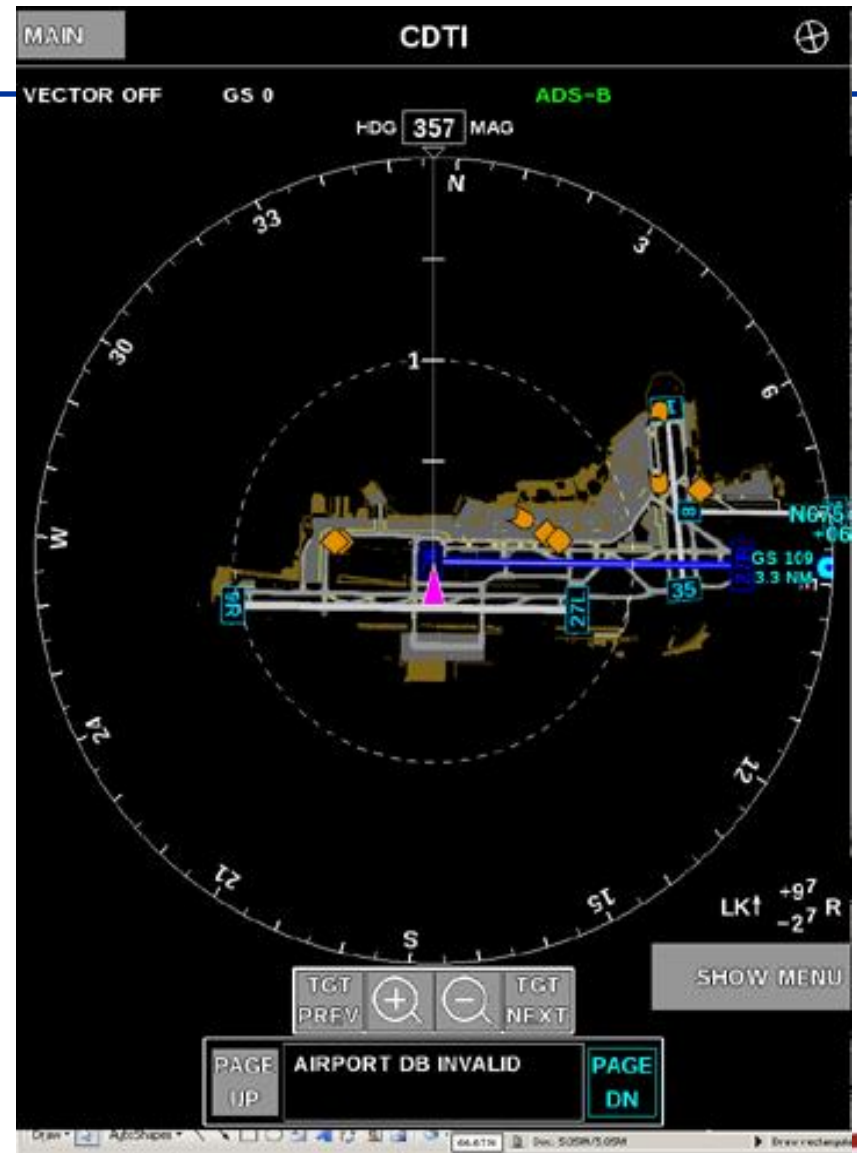
Symbol	Description
	Own Ship location
	Ground Directional, High accuracy (Ex: ADS-B traffic)
	Ground Directional, High accuracy, Selected
	Airborne Directional, High accuracy (Ex: ADS-B traffic)
	Airborne Directional, High accuracy, Selected
	Ground Non-Directional (Parked aircraft)

Plus Indications and Alerts

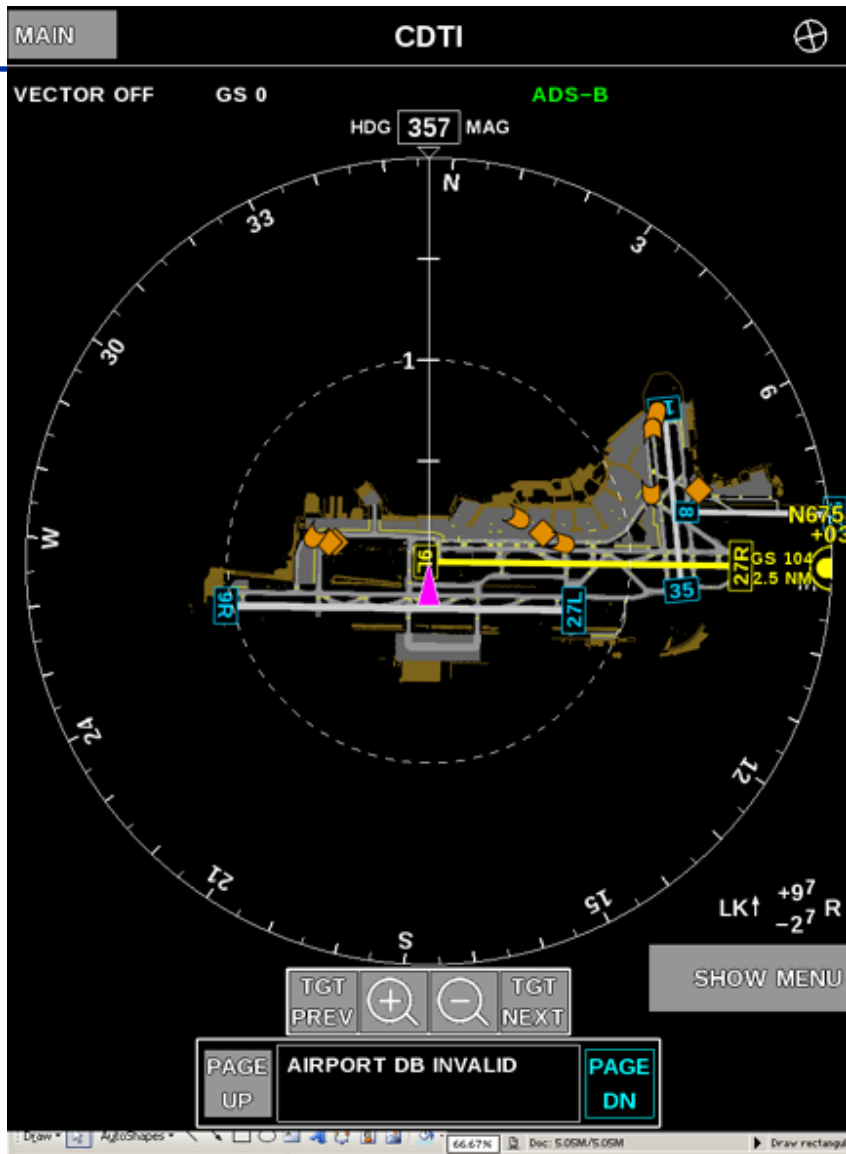
Crossing Rwy No I/A



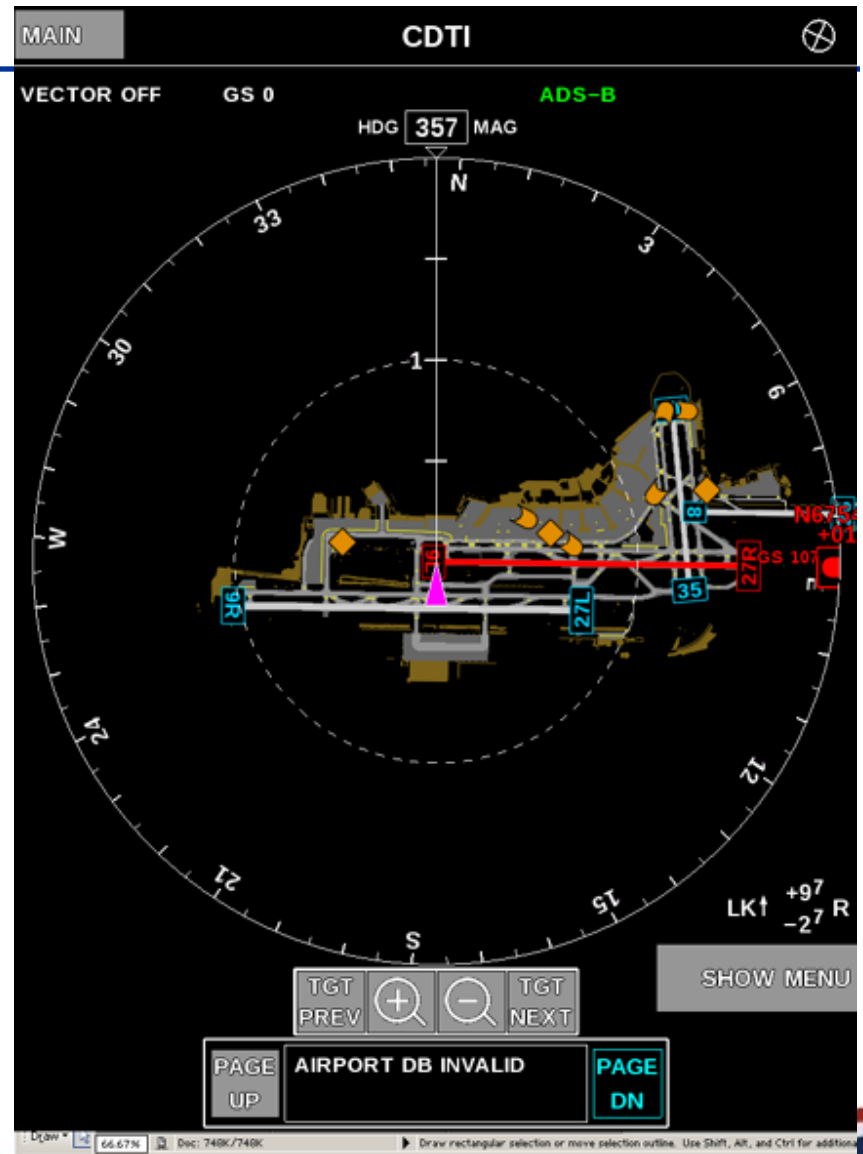
Indication: Traffic on approach



Caution: Traffic on approach



Warning: Traffic on approach



US Airways NextGen Support

- ADS-B Out
 - A330s DO-260B STC flight planned for May 18, 2012
 - All A330 equipped by end of 2012



US Airways NextGen Support

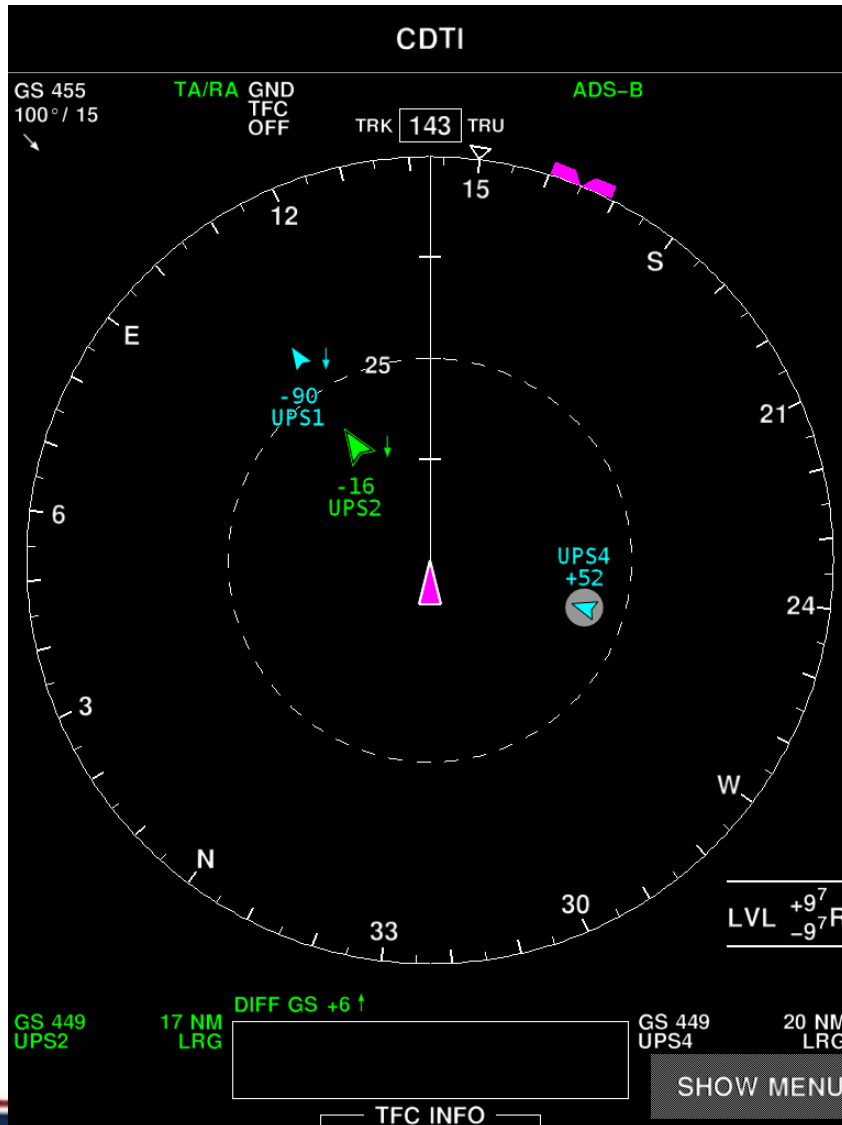
- ADS-B In
 - Joint FAA/ACSS/US Airways agreement to promote early adoption of NextGen
 - A330 EFBs upgraded to Class 3 end of 2012



US Airways NextGen Support

- ADS-B In
 - Installed in 2 A330 simulators,
 - SAMM January, 2013,
 - CDTI familiarization January 2013
 - ITP (In-Trail Procedures) January, 2013,
 - CAVS (beyond VSA) April, 2013, and
 - IM (Interval Management) August, 2013

CAVS Display on CDTI



AGD

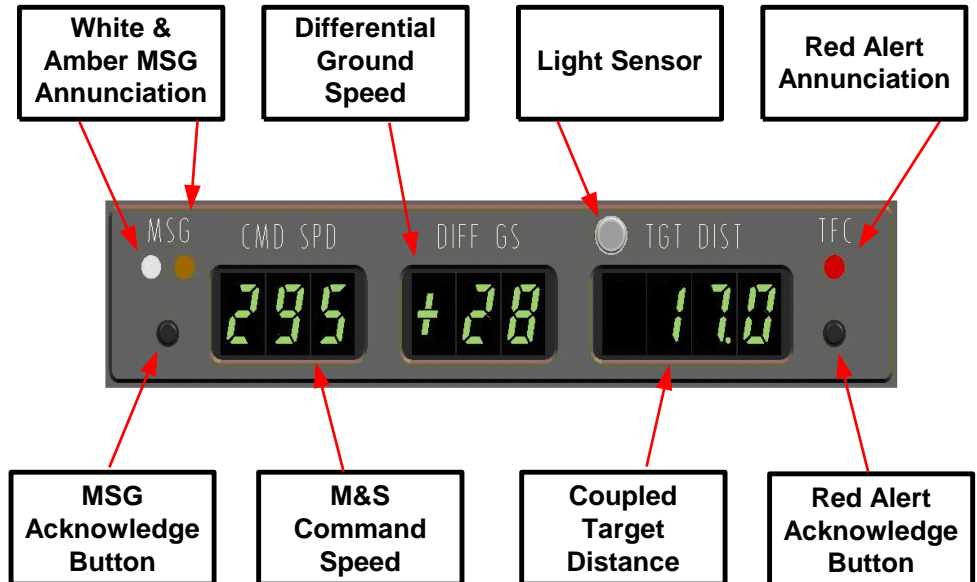
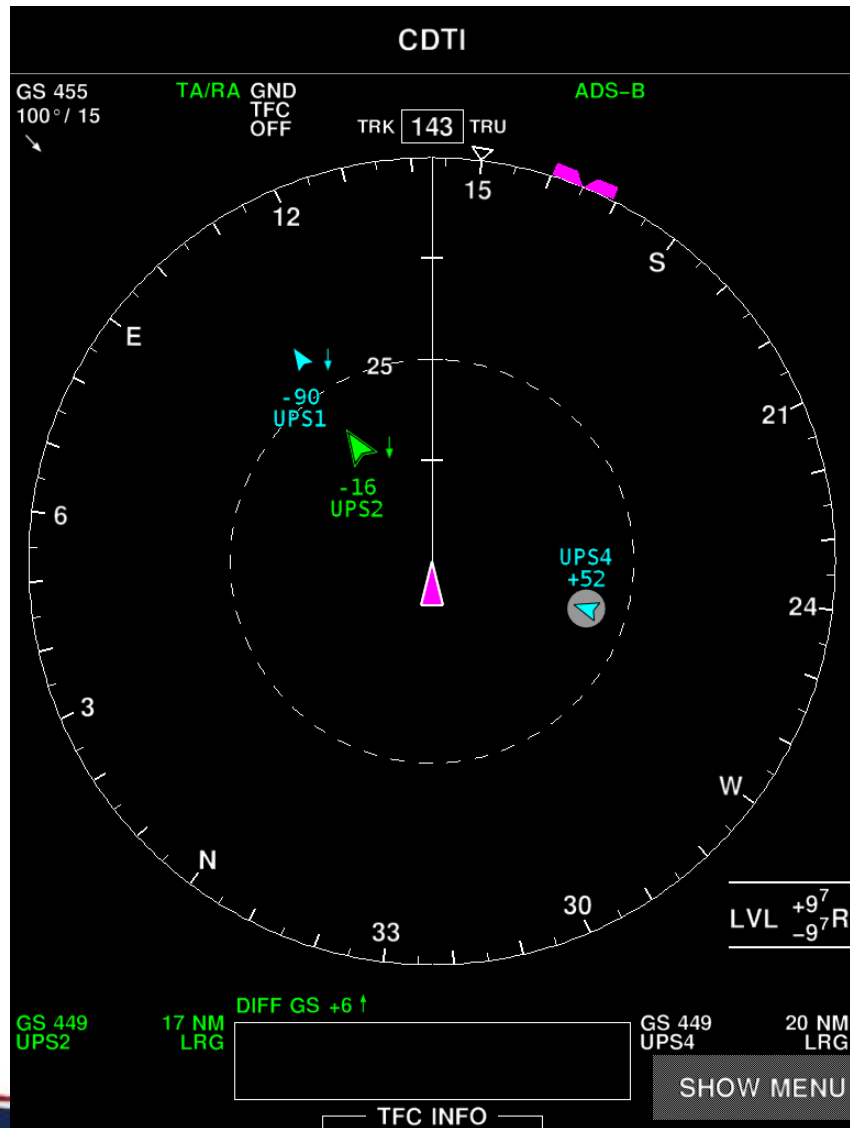
The AGD is the primary source of data for the pilot flying (PF) during performance of the CAVS Procedure.

CDTI

The CDTI provides the display of the following information to support the CAVS function:

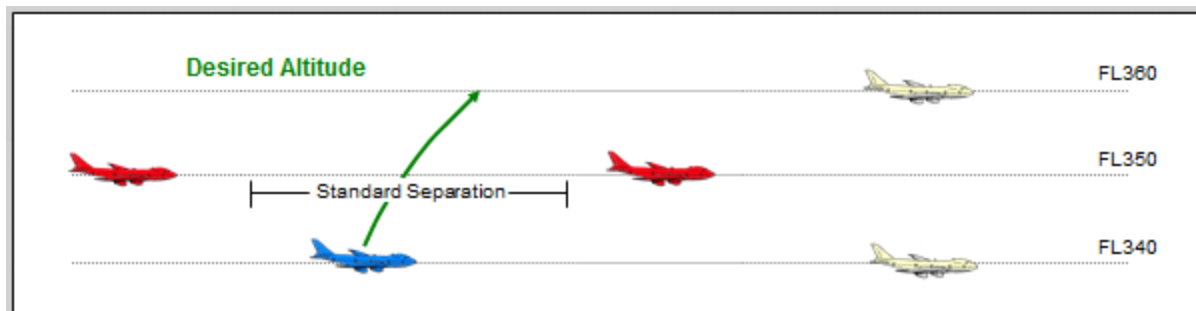
- Display of Own-Ship symbol
- Display of TTF Relative to Own-Ship
- Display of Differential Ground Speed
- Display of Distance to the TTF

IM/M&S Display on CDTI



EuroControl / US Airways ITP Partnering

- Install ACSS ITP application on 5 A330 aircraft to demonstrate ITP operational benefits in the North Atlantic
 - Compare fuel burn between ITP equipped and non-ITP equipped aircraft
- Initially only Reykjavik and Shanwick OCAs (Oceanic Control Areas) will participate
 - Reykjavik will allow clearance in radar coverage
 - Shanwick will allow clearance initially if no closer than current RLONG spacing (50nm)



Maximize Benefits / Minimize Costs

- ADS-B Out and In equipage is very expensive
- Limited cost/environmental savings proven to date
- US Airways working to maximize and prove out benefits by partnering with FAA and manufacturers

Maximize Benefits / Minimize Costs

- Minimize costs by not requiring multiple aircraft equipment upgrades or upgrades that don't add value to the operator
- Current APNT solution is excellent. Many operators are already equipped
- US Airways willing to participate in finding the best solution